

**LPDES PERMIT NO. LA0123234, AI No. 85292****LPDES STATEMENT OF BASIS**

FOR THE DRAFT LOUISIANA POLLUTANT DISCHARGE ELIMINATION SYSTEM  
(LPDES) PERMIT TO DISCHARGE TO WATERS OF LOUISIANA

- I. Company/Facility Name:** South Louisiana Ethanol, LLC  
278 E. Ravenna Rd.  
Belle Chasse, Louisiana 70037
- II. Issuing Office:** Louisiana Department of Environmental Quality (LDEQ)  
Office of Environmental Services  
Post Office Box 4313  
Baton Rouge, Louisiana 70821-4313
- III. Prepared By:** Jenniffer Sheppard  
Level 1 Industrial Permits Section  
Permits Division  
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**Date Prepared:** October 17, 2007

**IV. Permit Action/Status:****A. Reason For Permit Action:**

First time issuance of an individual Louisiana Pollutant Discharge Elimination System (LPDES) permit for a 5-year term following regulations promulgated at LAC 33:IX.2711/40 CFR 122.46\*.

- \* In order to ease the transition from NPDES to LPDES permits, dual regulatory references are provided where applicable. The LAC references are the legal references while the 40 CFR references are presented for informational purposes only. In most cases, LAC language is based on and is identical to the 40 CFR language. 40 CFR Parts 401, and 405-471 have been adopted by reference at LAC 33:IX.4903 and will not have dual references. In addition, state standards (LAC 33:IX Chapter 11) will not have dual references.

LAC 33:IX Citations: Unless otherwise stated, citations to LAC 33:IX refer to promulgated regulations listed at Louisiana Administrative Code, Title 33, Part IX.

40 CFR Citations: Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed at Title 40, Code of Federal Regulations in accordance with the dates specified at LAC 33:IX.4901, 4903, and 2301.F.

- B. NPDES permit -** NPDES permit effective date: N/A  
NPDES permit expiration date: N/A  
EPA has not retained enforcement authority.
- C. LWDPs permit -** LWDPs permit (WP1248) effective date: October 6, 1986  
LWDPs permit expiration date: October 5, 1991  
  
Facility has not been in operation since November 1987.  
Officially inactivated on March 13, 2003.

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- D. LPDES permits-
- LAG531140 - Sanitary General  
 LPDES permit effective date: May 1, 2001  
 LPDES permit reauthorization effective: December 1, 2002  
 LPDES permit expiration date: November 30, 2007
- LAR05N792 - MSGP  
 LPDES permit effective date: March 27, 2007  
 LPDES permit expiration date: April 30, 2011
- LAR10D964 - Construction General  
 LPDES permit effective date: April 4, 2007  
 LPDES permit expiration date: September 30, 2009
- Individual LPDES Permit  
 LPDES permit effective date: N/A, Initial Permit  
 LPDES permit expiration date: N/A, Initial Permit
- E. Application received on September 18, 2007. Additional information received via e-mail on October 11, 2007 and October 16, 2007.

**V. Facility Information:**

- A. Location - 278 E. Ravenna Rd. in Belle Chasse
- B. Applicant Activity -

According to the application, South Louisiana Ethanol, LLC, is a dry mill ethanol production facility that proposes to produce 75 million gallons per year of denatured, fuel-grade ethanol from corn.

The corn is proposed to be prepared by a dry milling process where the corn will be passed over a screen to remove foreign objects (rocks, debris, etc.). Subsequently, the corn will be ground in the facility's Hammer Mill to the appropriate fineness. The ground corn meal will then be mixed with water and enzyme then cooked to convert its starch to fermentable sugar.

Dry yeast will be propagated in the facility's "Yeast Conditioning System". This process involves mixing dry yeast with water and nutrients in order to activate it and then allowing its population to grow at the appropriate temperature.

Fermentation of the slurry will be achieved within batch fermentation vessels. Cooled corn meal slurry will be mixed with the yeast mixture, process water streams, and additional enzymes. Each fermenter will be equipped with its own circulation pump and cooler so that its temperature never exceeds 93°F (yeast dies at higher temperatures).

Once fermentation is complete, the fermented mixture now called "Beer", will be pumped to the Beer Tank. The Beer Tank will serve as a holding reservoir from which a continuous stream of beet will be pumped to the facility's distillation section.

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The facility's distillation scheme will consist of a Stripper Tower which will receive the fermented beet and distill it to a purity of 60% by volume. The ethanol-rich overhead from the Stripper will then be fed to the Rectifier column, where it will be further enriched to approximately 95% ethanol by volume. The bottom stream from the Stripper, which will consist of water and corn solids, will be sent to the facility's centrifuges to separate the liquid from the solids.

The 95% pure ethanol from the Rectifier will be dewatered by molecular sieves - producing a 99% + pure ethanol product. The pure ethanol will be denatured with gasoline at a concentration of 2-5% by volume to render it unfit for human consumption, and then sent to storage tanks where it will be loaded out to customers.

The centrifuged liquid will be sent to the facility's evaporators where it will be concentrated - creating Thick Syrup. The syrup will be recombined with dried material, and the mixture will be dried to 10% moisture by weight - producing an animal feed product known as Dried Distiller's Grains with Solubles (DDGS). This product will be sold as animal feed.

Stormwater is covered under the Multi-Sector General Permit (MSGP), LAR05N792, effective on March 27, 2007.

- C. Technology Basis - (40 CFR Chapter 1, Subchapter N/Parts 401, and 405-471 have been adopted by reference at LAC 33:IX.4903)

Ethanol Production (SIC Code 2869) is generally covered under the Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF) Guideline at 40 CFR 414, Subpart F. However, in accordance with the General Provisions located at 40 CFR 414, Subpart A, the provisions of those guidelines do not apply to any process wastewater discharges from the manufacture of organic chemical compounds solely by the extraction from plant and animal raw materials or by fermentation processes. Since the discharges from South Louisiana Ethanol, LLC would fall under this category, the OCPSF Guidelines are not applicable.

All process wastewater is proposed to be recycled and reused in the process. However, South Louisiana Ethanol, LLC has requested coverage to discharge process area stormwater during peak rain periods where the rainfall exceeds the demand of the cooling tower makeup. This request has been addressed in the permit.

There are no applicable guidelines for the utility wastewaters discharges from South Louisiana Ethanol, LLC at this time.

Other sources of technology based limits:

LDEQ Stormwater Guidance, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA Region 6).

Louisiana Water Quality Management Plan for Sanitary Dischargers.

LDEQ Sanitary General Permits

Best Professional Judgement

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- D. Fee Rate -
1. Fee Rating Facility Type: minor
  2. Complexity Type: II, BPJ due to process discharges being recycled and reused in the process.
  3. Wastewater Type: III
  4. SIC code: 2869

- E. Facility Effluent Flow - 0.565675 MGD (estimated value)

- VI. Receiving Waters:** parish drainage ditch via an effluent pipe, thence to the Barataria Estuary (Outfall 001), the Mississippi River via an effluent pipe (Outfall 002), and Wilkenson Canal via the Ravenna Road and Highway 23 roadside ditches (Outfall 003)

Barataria Estuary (Outfall 001 and 003)

1. River Basin: Barataria, Segment No. 020802
2. Designated Uses:

The designated uses are primary contact recreation, secondary contact recreation; and fish and wildlife propagation.

Mississippi River (Outfall 002)

1. River Basin: Mississippi River, Segment No. 070301
2. Designated Uses:

The designated uses are primary contact recreation, secondary contact recreation, fish and wildlife propagation, and drinking water supply.

**VII. Outfall Information:**

Outfall 001

- A. Type of wastewater - the discharge of low contamination potential stormwater.
- B. Location - at the point of discharge into the drainage ditch on the southwest corner of the facility, prior to commingling with any other waters, at Latitude 29°40'13", Longitude 89°58'23".
- C. Treatment - None
- D. Flow - Intermittent
- E. Receiving waters - parish drainage ditch via an effluent pipe, thence to the Barataria Estuary
- F. Basin and segment - Barataria Basin, Segment 020802

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Outfall 002

- A. Type of wastewater - the discharge of cooling tower blowdown, water softener and reverse osmosis blowdown, and process area stormwater runoff.
- B. Location - at the point of discharge from the effluent pipe on the east side of the facility after commingling of cooling tower blowdown, water softener and reverse osmosis blowdown, and process area stormwater runoff, at Latitude 29°40'25", Longitude 89°57'52".
- C. Treatment - None
- D. Flow - Continuous, 0.565416 MGD (Estimated Flow)
- E. Receiving waters - the Mississippi River via an effluent pipe
- F. Basin and segment - Mississippi River Basin, Segment 070301

Outfall 003

- A. Type of wastewater - treated sanitary wastewater.
- B. Location - at the point of discharge from the treatment facility prior to combining with the waters of the Ravenna Road ditch, at Latitude 29°40'16", Longitude 89°58'14".
- C. Treatment - treatment of sanitary wastewaters consists of:
  - mechanical treatment plant
  - chlorination
  - sludge disposal (as needed)
- D. Flow - Intermittent, 0.003 MGD.
- E. Receiving waters - Wilkenson Canal via the Ravenna Road and Highway 23 roadside ditches
- F. Basin and segment - Barataria Basin, Segment 020802

**VIII. Permit Limit Rationale:**

The following section sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. Also set forth are any calculations or other explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guideline or performance standard provisions as required under LAC 33:IX.2707/40 CFR Part 122.44 and reasons why they are applicable or an explanation of how the alternate effluent limitations were developed.

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A. TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Following regulations promulgated at LAC 33:IX.2707.L.2.b/40 CFR Part 122.44(l)(2)(ii), the draft permit limits are based on either technology-based effluent limits pursuant to LAC 33:IX.2707.A/40 CFR Part 122.44(a) or on State water quality standards and requirements pursuant to LAC 33:IX.2707.D/40 CFR Part 122.44(d), whichever are more stringent.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Regulations promulgated at LAC 33:IX.2707.A/40 CFR Part 122.44(a) require technology-based effluent limitations to be placed in LPDES permits based on effluent limitations guidelines where applicable, on BPJ (best professional judgement) in the absence of guidelines, or on a combination of the two. The following is a rationale for types of wastewaters. See outfall information descriptions for associated outfall(s) in Section VII.

1. Outfall 001 - the discharge of low contamination potential stormwater.

Uncontaminated or low potential contaminated stormwater discharged through discrete outfall(s) not associated with process wastewater shall receive the following BPJ limitations in accordance with this Office's guidance on stormwater, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA Region 6).

| <u>PARAMETER</u> | <u>MONTHLY AVERAGE</u><br><u>mg/L</u> | <u>DAILY MAXIMUM</u><br><u>mg/L</u> |
|------------------|---------------------------------------|-------------------------------------|
| Flow (MGD)       | Report                                | Report                              |
| TOC              | N/A                                   | 50                                  |
| Oil and Grease   | N/A                                   | 15                                  |
| pH (Std. Units)  | 6.0 (min)                             | 9.0 (max)                           |

Site-Specific Consideration(s)

Flow - established in accordance with LAC 33:IX.2707.I.1.b.

PH - established in accordance with LAC 33:IX.1113.C.1.

TOC and Oil & Grease - These limitations have been established in accordance with similarly permitted discharges, the Multi-Sector General Permit for Industrial Stormwater Discharges (LAR050000), and Best Professional Judgment.

2. Outfall 002 - the discharge of cooling tower blowdown, water softener and reverse osmosis blowdown, and process area stormwater runoff.

Utility wastewaters and process area stormwater being discharged to discrete outfalls receive BPJ limitations/monitoring requirements according to the following schedule:

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| <u>PARAMETER</u> | <u>MONTHLY AVERAGE</u><br><u>mg/L</u> | <u>DAILY MAXIMUM</u><br><u>mg/L</u> |
|------------------|---------------------------------------|-------------------------------------|
| Flow (MGD)       | Report                                | Report                              |
| TOC              | N/A                                   | 50                                  |
| TSS              | 46                                    | 149                                 |
| Oil and Grease   | N/A                                   | 15                                  |
| pH (Std. Units)  | 6.0 (min)                             | 9.0 (max)                           |

**Site-Specific Consideration(s)**

Flow - established in accordance with LAC 33:IX.2707.I.1.b.

PH - established in accordance with LAC 33:IX.1113.C.1.

TSS - limitations are established based on BPJ of the OCPSF Guidelines at 40 CFR 414.64, Subpart F to account for possible discharges of process area stormwater.

TOC and Oil & Grease - These limitations have been established in accordance with similarly permitted discharges, the Multi-Sector General Permit for Industrial Stormwater Discharges (LAR050000), and Best Professional Judgment.

3. **Outfall 003 - treated sanitary wastewaters**

Sanitary wastewaters (internal or external) are regulated in accordance with LAC 33:IX.711 or 709.B, by BPJ utilizing the sanitary general permits issued by this Office, and the Louisiana Water Quality Management Plan, Appendices A (Areawide Sanitary Effluent Limits Policy) and B (Statewide Sanitary Effluent Limits Policy), as applicable. Concentration limits are used in accordance with LAC 33:IX.2707.F.1.b which states that mass limitations are not necessary when applicable standards and limitations are expressed in other units of measurement. LAC 33:IX.709.B references LAC 33:IX.711 which express BOD<sub>5</sub> and TSS in terms of concentration.

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| <b>PARAMETER</b>                  | <b>MONTHLY AVERAGE<br/>mg/L</b> | <b>WEEKLY AVERAGE<br/>mg/L</b> |
|-----------------------------------|---------------------------------|--------------------------------|
| Flow (MGD)                        | Report                          | Report                         |
| BOD <sub>5</sub>                  | N/A                             | 45                             |
| TSS                               | N/A                             | 45                             |
| Fecal Coliform<br>colonies/100 ml | N/A                             | 400                            |
| pH (Std. Units)                   | 6.0 (min)                       | 9.0 (max)                      |

**Site-Specific Consideration(s)**

Flow - established in accordance with LAC 33:IX.2707.I.1.b.

PH - established in accordance with LAC 33:IX.1113.C.1.

BOD<sub>5</sub>, TSS, and Fecal Coliform - limitations were established in accordance with the Class I, Sanitary General Permit, LAG530000, and Best Professional Judgment.

**C. WATER QUALITY**

The following pollutants received water quality based effluent limits:

| <b>POLLUTANT(S)</b> |
|---------------------|
| None                |

**TMDL Waterbodies**

**Outfalls 001 and 003**

The discharges from Outfalls 001 and 003 include low contamination potential stormwater runoff and treated sanitary wastewaters are to a parish ditch via an effluent pipe, thence to the Barataria Estuary (001) and from Wilkenson Canal via the Ravenna Road and Highway 23 roadside ditches (003), Segment No. 020802. These Barataria Estuary and Wilkenson Canal is listed on the 303(d) report as being impaired for total copper. Based on the type of facility and the discharges from these outfalls (stormwater and sanitary) total copper is not reasonably expected to be present in the discharge to cause further impairments in the receiving stream. Therefore, no additional requirements were added to this proposed permit.

**Outfall 002**

The discharges from Outfall 002 include cooling tower blowdown, water softener and reverse osmosis blowdown, and process area stormwater runoff are to Mississippi River via an effluent pipe, Segment No. 070301. The Mississippi River is not listed on the 303(d) report

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as being impaired for any pollutant. Therefore, no additional requirements were added to this proposed permit.

Monitoring frequencies for water quality based limited parameters are established in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001.

**Site-Specific Consideration(s)**

None

**D. MONITORING FREQUENCIES**

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity [LAC 33:IX.2715/40 CFR 122.48(b)] and to assure compliance with permit limitations [LAC 33:IX.2707.1./40 CFR 122.44(I)]. The following section(s) explain the rationale for the monitoring frequencies stated in the draft permit.

1. Outfall 001 - the discharge of low contamination potential stormwater.

Flow, TOC, Oil & Grease, and pH - A monitoring frequency of 1/quarter for these pollutant are considered adequate for the protection of the receiving water and its designated uses as stated in Section VI.7. These frequencies are also consistent with similarly permitted discharges at other facilities and have been applied based on Best Professional Judgment.

| <b>PARAMETER</b> | <b>MONITORING FREQUENCY</b> |
|------------------|-----------------------------|
| Flow             | 1/quarter                   |
| TOC              | 1/quarter                   |
| Oil & Grease     | 1/quarter                   |
| pH               | 1/quarter                   |

2. Outfall 002 - the discharge of cooling tower blowdown, water softener and reverse osmosis blowdown, and process area stormwater runoff.

Utility wastewater and stormwater pollutants being discharged to discrete outfalls shall receive monitoring frequencies according to the following schedule:

Flow, TOC, TSS, Oil & Grease, and pH - A monitoring frequency of 1/month for these pollutant are considered adequate for the protection of the receiving water and its designated uses as stated in Section VI.7. These frequencies are also consistent with similarly permitted discharges at other facilities and have been applied based on Best Professional Judgment.

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| <b>PARAMETER</b> | <b>MONITORING FREQUENCY</b> |
|------------------|-----------------------------|
| Flow             | 1/month                     |
| TOC              | 1/month                     |
| TSS              | 1/month                     |
| Oil & Grease     | 1/month                     |
| pH               | 1/month                     |

3. Outfall 003 - treated sanitary wastewater

Sanitary wastewater being discharged at discrete outfall(s), the monitoring frequency of sanitary wastewater follows LDEQ's sanitary general permits which are based on flow ("X" = Amount of Flow).

Class I, X <5,000 gpd - All parameters, 1/6 months

Flow, BOD<sub>5</sub>, TSS, Fecal Coliform, and pH - A monitoring frequency of 1/ 6 months for these pollutant are considered adequate for the protection of the receiving water and its designated uses as stated in Section VI.7. These frequencies are also consistent with the Class I Sanitary General Permit and have been applied based on Best Professional Judgment.

| <b>PARAMETER</b> | <b>MONITORING FREQUENCY</b> |
|------------------|-----------------------------|
| Flow             | 1/ 6 months                 |
| BOD <sub>5</sub> | 1/ 6 months                 |
| TSS              | 1/ 6 months                 |
| Fecal Coliform   | 1/ 6 months                 |
| pH               | 1/ 6 months                 |

**IX. Compliance History/DMR Review :**

| <b>DATE</b> | <b>OUTFALL</b> | <b>PARAMETER</b> | <b>REPORTED VALUE</b> | <b>PERMITTED VALUE</b> |
|-------------|----------------|------------------|-----------------------|------------------------|
| N/A         | N/A            | N/A              | N/A                   | N/A                    |

NONE, FACILITY NOT IN OPERATION SINCE NOVEMBER 1987.

Inspections - NPDES compliance Inspection performed at the facility on February 14, 2001. Inspection revealed a change in ownership and a single discharge of sanitary wastewater generated from the guard gate house, covered under the LPDES General Sanitary permit, LAG531140.

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**X. "IT" Questions - Applicant's Responses**

It Questions and South Louisiana Ethanol, LLC's responses can be found in the LPDES Permit Application Submittal dated September 18, 2007, Appendix I.

**XI. ENDANGERED SPECIES**

The receiving waterbody, Subsegment 020802 of the Barataria Basin (**Outfalls 001 and 003**) is not listed in Section II.2 of the Implementation Strategy as requiring consultation with the U.S. Fish and Wildlife Service (FWS). This strategy was submitted with a letter dated September 29, 2006 from Watson (FWS) to Brown (LDEQ). Therefore, in accordance with the Memorandum of Understanding between the LDEQ and the FWS, no further informal (Section 7, Endangered Species Act) consultation is required. It was determined that the issuance of the LPDES permit is not likely to have an adverse effect on any endangered or candidate species or the critical habitat. The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat.

The receiving waterbody, Subsegment 070301 Mississippi River Basin (**Outfall 002**), has been identified by the U.S. Fish and Wildlife Service (FWS) as habitat for the Pallid Sturgeon, which are listed as an endangered species. LDEQ has not submitted this draft permit to the FWS for review in accordance with a letter dated 9/29/06 from Watson (FWS) to Brown (LDEQ). As set forth in the Memorandum of Understanding between the LDEQ and the FWS, and based on information provided by the FWS, LDEQ has determined that the issuance of the LPDES permit is not likely to have an adverse effect upon the Pallid Sturgeon. Effluent limitations are established in the permit to ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat. The more stringent of technology and water quality based limits (as applicable) have been applied to ensure maximum protection of the receiving water.

**XII. Historic Sites:**

The discharge is from an existing facility location, which does not include an expansion on undisturbed soils. Therefore, there should be no potential effect to sites or properties on or eligible for listing on the National Register of Historic Places, and in accordance with the "Memorandum of Understanding for the Protection of Historic Properties in Louisiana Regarding LPDES Permits" no consultation with the Louisiana State Historic Preservation Officer is required.

**XIII. Tentative Determination:**

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to issue a permit for the discharge described in the application.

**XIV. Variances:**

No requests for variances have been received by this Office.

**XV. Public Notices:**

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit and may request a public hearing to clarify issues involved in

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the permit decision at this Office's address on the first page of the statement of basis. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

Local newspaper of general circulation

Office of Environmental Services Public Notice Mailing List